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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KAFIMOSAVI, HOSEIN

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,456	<b>Applicant(s)</b> SARRUT, NICOLAS	
	<b>Examiner</b> HOSEIN KAFIMOSAVI	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAIL ACTION**

1. The amendment filed May 23, 2008 has been entered. Claims 8-14 remain pending in the application. Due to applicant's amendments, the previous 35 USC 102 and 35 USC 103 rejections of claims 8-14 are withdrawn and new grounds of rejection for claims 8-14 is presented below.

### ***Claim Analysis***

The Court of Appeals for the Federal Circuit, in its en banc decision *In re Donaldson Co.*, 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994), decided that a "means-or- step-plus-function" limitation should be interpreted in a manner different than patent examining practice had previously dictated. The Donaldson decision affects only the manner in which the scope of a "means or step plus function" limitation in accordance with 35 U.S.C. 112, sixth paragraph, is interpreted during examination. *Donaldson* does not directly affect the manner in which any other section of the patent statutes is interpreted or applied.

A claim limitation will be presumed to invoke 35 U.S.C. 112, sixth paragraph, if it meets the following 3-prong analysis:

- (A) the claim limitations must use the phrase "means for" or "step for;"
- (B) the "means for" or "step for" must be modified by functional language;
- (C) the phrase "means for" or "step for" must not be modified by sufficient structure, material, or acts for achieving the specified function.

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As to claim 8, the phrase “means for” is modified by sufficient structure, material or acts for achieving the specified function, the USPTO will not apply 35 U.S.C. 112 sixth paragraph, until such modifying language is deleted from the claim limitation.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 8-14 are rejected under 35 U.S.C. 103(a) as being obvious over Ticknor et al. (US 7,016,560 B2) in view of Adjari et al. (US 5,593,565) and Markoski et al. (US 2004/0072047).

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As to claim 8, Ticknor discloses a microfluidic device comprising at least one microchannel (900) (designed to contain at least one liquid (901) and at least one fluid non-miscible (902) with the liquid), said microchannel being bounded by a bottom wall, side walls and a top wall (Column 7, lines 1-5); said microfluidic device comprising at least one electrode (904) arranged on at least one part of a first wall of the microchannel and at least one counter-electrode (903) on at least one part of a second wall arranged facing the electrode (Figure 9; Column 24, lines 59-67).

Ticknor further discloses that a continuous channel may be configured by applying multiple sets of electrodes spaced around the entire microchannel (Column 36, lines 9-17). However, the reference does not disclose one electrode over the entire length of the first wall and one counter-electrode over the entire length of the second wall.

Adjari discloses a microfluidic device comprising at least one microchannel (Corridor C), said microchannel being bounded by a bottom wall, side walls and a top wall, with the said microfluidic device comprising at least one electrode (3) arranged on at least one part of a first wall of the microchannel, over the entire length thereof, and at least one counter-electrode (4) arranged over the entire length of the microchannel, on at least one part of a second wall arranged facing the electrode (Figure 5; Column 7, lines 48-50; Column 8, lines 12-16). Adjari further discloses that it is not necessary to break down each electrode into a plurality of adjacent and independent electrodes supplied independent of each other which simplifies the microfluidic device and makes it easier to control (Column 10, lines 25-28; Column 1, lines 51-59).

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Markoski discloses a microfluidic device comprising at least one microchannel (c, said microchannel being bounded by a bottom wall, side walls and a top wall, with the said microfluidic device comprising at least one electrode (a) arranged on only one part of a first wall of the microchannel, wherein the microchannel includes at least two zones, respectively designed to contain at least one liquid and one fluid non-miscible with the liquid, at least one of the two zones is formed by a space corresponding to the width of the at least one electrode arranged on only one part of the first wall (Fig 8A; [0048]).

It would have been obvious to one with ordinary skill in the art at the time of the invention to have the microfluidic device of Ticknor comprised of an electrode arranged on at only one part of a first wall of the microchannel, over the entire length thereof, and at least one counter-electrode arranged over the entire length of the microchannel, on at least one part of a second wall arranged facing the electrode, as taught by Adjari and Markoski, for the benefit of simplifying the microfluidic device, making it easier to control and optimizing electrode area activity chemical composition (Adjari at Column 1, lines 51-59; Markoski at [0063]).

As to claim 9, Ticknor discloses, as modified in view of Adjari and Markoski, the microfluidic device above, wherein the counter-electrode is arranged on the whole of the second wall (Adjari at Column 8, lines 12-16).

As to claim 10, Ticknor discloses, as modified in view of Adjari and Markoski, the microfluidic device above, wherein the electrode and counter-electrode are respectively arranged on the bottom and top wall (Ticknor at Column 7, lines 1-8).

As to claim 11, Ticknor discloses, as modified in view of Adjari and Markoski, the microfluidic device above, wherein the electrode and counter-electrode may be respectively arranged on the side walls (Ticknor at Column 7, lines 1-5).

As to claim 12, Ticknor discloses, as modified in view of Adjari and Markoski, the microfluidic device above, comprising insulating means (Ticknor at Column 20, lines 5-9) arranged between the electrode or counter-electrode and said fluid or said liquid. The material worked upon (liquid, fluid) does not limit the scope of an apparatus claim (MPEP2114[R-1]); however Ticknor discloses the fluid or liquid being electrically conducting (Column 10; lines 59-63).

As to claim 13, the material worked upon (liquid, fluid) and the manner by which the microfluidic device cooperates with the material worked upon does not limit the scope of an apparatus claim (MPEP 2114[R-1]); however, the microfluidic device of Ticknor, as modified in view of Adjari and Markoski, is capable of having the fluid flow in the microchannel in an opposite direction to that of the liquid.

As to claim 14, Ticknor discloses, as modified in view of Adjari and Markoski, the microfluidic device above, wherein the microchannel comprises, at least one end, two end microchannels (ports) designed for the fluid and the liquid to respectively flow therethrough (Column 51, Line 17-20).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over Adjari et al. as applied to claim 8 above and further in view of Ticknor et al and Markoski.

As to claim 10, the examiner took the position that the electrode (3) and counter-electrode (4) of Adjari are respectively arranged on the bottom and top wall. However, if it is not taken that the electrode and counter-electrode are not respectively arranged as on the bottom and top wall; the following rejection is set forth to expedite prosecution.

Adjari discloses the electrode and counter-electrode are respectively arranged horizontally with the electrode (3) positioned on the lower surface of the microchannel and counter-electrode (4) positioned on the upper surface of the microchannel (Column 9; Lines 20-28).

Ticknor discloses that the microfluidic device above, wherein the electrode and counter-electrode are respectively arranged on the bottom and top wall (Ticknor at Column 7, lines 1-8).

It would have been obvious one with ordinary skill in the art at the time of the invention to have the electrode and counter-electrode of Adjari be respectively arranged on the bottom and top wall, as taught by Ticknor, in order to provide the designated effect throughout the entire device (Ticknor at Column 7, lines 1-7).

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 8-14 have been considered but are moot in view of the new ground(s) of rejection.



Applicant argues on page 5 of the Remarks that Adjari, alone or in combination of secondary reference does not teach a device for stabilizing the contact zone between the liquid and fluid non-miscible with the other.

In response to applicant's argument of using the device for stabilizing the contact zone between the liquid and fluid non-miscible with the other, the examiner argues that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

### ***Conclusion***

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

/Nam X Nguyen/  
Supervisory Patent Examiner, Art  
Unit 1753

/H. K./  
Examiner, Art Unit 4132